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ORIGINAL DEPARTMENT.

LECTURES

ON

EXPERIMENTAL PHYSIOLOGY.

Delivered in the Physiological Laboratory of the University of Pennsylvania,

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Reported expressly for the MEDICAL AND SURGICAL REPORTER.

Lecture II—Physiology of the Salivary Secretions.

(Continued from Vol. XXXIX, p. 534.)

We will take up to-day, gentlemen, the study of the special physiology of the individual salivary secretions, commencing with that of the parotid gland.

The human parotid saliva can readily be obtained in a state of purity by catheterizing Steno's duct. This can be accomplished in the following manner: the experimenter sits opposite a mirror, with the mouth open and brilliantly illuminated. If now an angle of the mouth be drawn outward and forward, so as to stretch the cheek, the papilla which marks the entrance of Steno's duct into the mouth will be seen opposite the second molar tooth of the upper jaw. With a little practice a small canula can be readily inserted into the duct, the opening of which is marked by a little dot, and held in position to catch the saliva, which will then flow along the tube, if its flow be stimulated by the vapor of ether, pyrethrum root, vinegar, etc. It is easier to catheterize another, but with a little practice the operation can be performed quite readily on one's self. One precaution, however, must be observed, to ensure reliability of result. Occasionally the parotid duct receives, near its entrance

into the mouth, the secretions of several small muciparous glands; to avoid, therefore, the modification of the parotid saliva which would be caused by the admixture of mucus from this source, the catheter must be carried as deeply as possible, so as to pass the opening of these ducts.

My assistant, Dr. Foulkrod, has been kind enough to allow me to show you on him the steps of this little operation. The canula is inserted with the greatest ease, and without any pain or discomfort. I place a drop of vinegar on his tongue; the saliva is abundantly secreted, and flows along the tube.

Here is a specimen of human parotid saliva obtained in this manner, and you see that it differs from the mixed saliva in that it is perfectly clear, without turbidity or opalescence, and that it is much more watery. It is also alkaline. It was formerly supposed that the parotid saliva had no influence on starch; we will examine this specimen, following the process with which you are familiar. In a few moments we find evidence of sugar. Another peculiarity of the parotid saliva is, that although sulpho-cyanide of potassium has been found upon chemical analysis, there exists in the parotid saliva some other substance that masks its reaction with the perchloride of iron. In this instance the addition of a solution of the salt does not produce the beautiful red color which you saw follow the same combination when mixed saliva was substituted for the parotid.

The study of the various natural conditions which serve as stimulants to the individual salivary secretions can be best carried on in the lower animals: for this purpose we receive the

secretion before it becomes mingled with the fluids of the mouth, by means of salivary fistulæ, the operation for which I will now show you. To make a parotid fistula in a dog, the animal usually employed in these experiments, the hair is first shaved from the cheek between the eye and the angle of the mouth. On running the finger along the lower border of the zygomatic arch, just before it is inserted into the superior maxilla, a slight notch is felt; it is just at this point that the duct passes into the mouth. After chloroforming the animal, I will make an incision through the skin over this point, cutting obliquely in a direction from the inner canthus of the eye to the angle of the mouth, passing through the subcutaneous cellular tissue, when the facial artery and vein, branches of the facial nerve and the parotid duct are found all together; the duct, pearly white in hue, passing horizontally across the fibres of the masseter muscle, parallel to the nerve, but usually about a quarter of an inch below it, while the artery and vein run from above downward. The vessels and nerve must be carefully removed from before the duct, which is to be isolated and closed as near the mouth as possible with a clip. A canula can then be inserted into the duct. If it is desired to retain the fistula permanently, the duct must be freed from the connective tissue for as long a distance as possible, divided, and one end brought out at an angle of the wound, which is to be closed with sutures, one passing through the duct to retain it in position. After a few days, when the wound is healing, the duct will mortify and drop out, leaving a fistulous track to the gland, which must be kept open by the daily passage of a fine probe, as it has a decided tendency to close.

In this other dog, which I now show you, I made a parotid fistula in the manner just described, as well as a sub-maxillary and sub-lingual fistula, several weeks ago, and you see the animal is in very good health and spirits, while the wounds have all closed, with the exception of the ducts, which remain fistulous, the surrounding parts appearing perfectly normal. It is much better to experiment on dogs which have not been lately operated on, as in them there is no danger of the effects of the operation modifying the results of our investigations.

Sub-maxillary and sub-lingual fistulæ are made in the following manner. The same animal being chloroformed, and the hair shaved from the under surface of the lower jaw, an incision is made along the inner border of the ramus of the lower jaw, from the anterior insertion of the digastric muscle, forward, for about two inches,

dividing the skin and platysma, every vein that comes into view being secured with two ligatures, and divided between them. The mylo-hyoid muscle is now in view, and is to be very cautiously divided at its middle, avoiding the mylo-hyoid nerve, which you see lies upon it. Underneath this muscle will be found the sub-maxillary and sub-lingual ducts, running forward side by side, near to the ramus of the jaw, to enter the mouth: the sub-maxillary duct being somewhat the largest and lying nearest the jaw. The ducts can now be isolated and divided, and treated as you have just seen me do in making a permanent parotid fistula. When, however, as in this case, it is desired to make both fistulæ in the same animal, the two fistulæ should be on opposite sides of the mouth.

Let us now study the effect of different stimuli on the secretion of these glands, in the manner proposed by Schiff, using the dog which bears the three fistulæ, and isolating as much as practicable the action of the different agents.

The channels through which these glands may be excited are four in number; 1st, through mental impression, as sight or smell; 2d, by mastication alone; 3d, through taste alone, and 4th, through the influence of taste combined with movements of mastication.

You observe now, gentlemen, that the orifices of these glands are almost completely dry, and that pressure along the course of the ducts brings out only a single drop from the parotid duct. I will wipe it away with a sponge, and dry completely each of the other orifices.

While the dog, which has fasted since yesterday, is held, I hold before him, at some distance, a bone; he shows signs of impatience, but there is no flow of saliva from the parotid, or sub-maxillary or sub-lingual, at least, none that we can appreciate. I now approach the bone to the dog's nose, holding his jaws so that no movement of mastication can be made, and there is still no secretion, a result which you know is contrary to the instances in man, in whom the mouth waters at sight and odor of savory food. But, however, we have seen in the dog, in whom perhaps it is hardly fair to study mental processes, that sight and smell have no effect on the secretion of saliva.

I open now the mouth of the animal, and place transversely across his jaws a light splinter of wood, taking care not to put it so far back as to press on the salivary papillæ, and on approaching the bone to the animal's nose, the splinter is broken into fragments by the movements of his jaws in the attempt to get at the bone. We have

here, then, produced motions of mastication without any influence on the sense of taste; there appears a single drop of saliva at the orifice of the parotid duct, and, if anything, a little larger drop at that of the sub-maxillary, while none is seen at the sub-lingual. We have here a departure from the strict line of function drawn by Bernard. He taught, and has been followed almost universally and unquestioned, that the parotid secretion was concerned in mastication alone, and was secreted only by movements of mastication; we have already seen that it is not the parotid alone which is influenced by these movements, but that the sub-maxillary is also affected, though both glands are but *slightly* stimulated. Let us now see what is the result of isolated excitations of taste.

While holding his lower jaw, so as to prevent all movements of mastication, I place on the tip of his tongue, by means of a glass rod, a few drops of strong vinegar, when almost immediately a drop of fluid appears, not only at the orifice of the parotid duct, but also at that of the sub-maxillary; it is succeeded by another, and again another in rapid succession, quite a stream of saliva running across the animal's jaws. A few drops of a strong decoction of colocynth applied to the base of the tongue, is followed by a decided flow of saliva from both glands, while, as far as we can judge, the sub-lingual is entirely inactive. We have seen, then, that the sense of taste alone is capable of exciting the secretions of the parotid and sub-maxillary glands in about equal degrees.

I will now give the bone to the animal, and you see he masticates it with avidity, in spite of the elevated position in which I hold his head. And now the secretion from both glands is very marked, running down his neck on to the table, a decidedly more profuse secretion than we saw at any time before. There is also a very viscid drop of saliva at the orifice of the sub-lingual duct.

You have now seen that the secretion of each of the salivary glands receives the most efficient stimulus when movements of mastication are combined with the appreciation of a "taste." These results show, as was first pointed out by Schiff, that the line of demarcation drawn by Bernard between the functions of these glands cannot be strictly adhered to. The parotid, as I have told you, was supposed to be only concerned with the mastication of food, and attains its highest development in the animals which have to grind their food; the sub-maxillary was supposed to be only concerned in the apprecia-

tion of taste, and in comparative anatomy it disappears entirely when there is no need of this sense, as in granivorous birds, while it attains its greatest development in the carnivora. Finally, the sub-lingual secretion was held only to be secreted for the purposes of deglutition. Although there is doubtless considerable force in these statements, I have shown you that the isolation of their rôle has been exaggerated.

While on this subject, let me show you another experiment in reference to the secretion of the parotid saliva. I will give him one end of this hard bone to chew, retaining my hold of the other end, and change it from one side of his mouth to the other; you see that the flow of parotid saliva attains its maximum when the masticating movements are made on the side of the fistula, though that of the sub-maxillary does not appear to be altered. This peculiarity has not been sustained in man in those instances in which parotid fistulae have permitted a study of the salivary secretion.

Dalton, however, states that by catheterizing the parotid duct in man he was able to notice the same relation between the secretion of saliva and the direction of mastication. The parotid saliva of the dog does not act on starch.

In the rabbit the small size of the parotid duct prevents the insertion of a canula, but the secretion can be studied by cutting the duct across. In the rabbit the duct has the same anatomical relations as in the dog. It crosses the masseter muscle at about its middle, accompanied by branches of the facial nerve, and parallel with the transverse facial artery. At the anterior margin of the masseter it dips toward the median line, to enter the mouth. I have here a large rabbit fastened on Czermak's holder and chloroformed. After clipping off the fur from its cheek I make a vertical incision in the line of the cornea, through the skin and connective tissue down to the masseter muscle, thus dividing the duct as well as the facial nerves and blood vessels. When the bleeding stops we can examine the secretion of saliva. Since we are unable to collect the secretion, probably the best way of rendering the secretion visible is to put over the end of the duct a small piece of bibulous paper colored red with litmus. As each drop of saliva escapes from the divided end of the duct, it is absorbed by the paper, and by its alkalinity produces a blue spot, the size of which varies with the rapidity of secretion. The animal has now come up from the chloroform, so we can study the various stimuli. A drop of acetic acid applied by means of a glass rod to the tip of the

tongue causes the appearance of quite a large drop of saliva; an alkali produces a smaller drop, while electrical stimulation of the tongue and inside of the cheeks hardly seems to increase the flow. I will again use this same animal, in a few moments, in another connection.

The sub-maxillary saliva in man may be obtained in a state of purity, either by catheterizing the duct of Wharton, a proceeding of considerable difficulty, or by withdrawing it by means of a syringe which fits accurately the papilla by means of a small funnel-shaped nozzle. When it is desired to catheterize the sub-maxillary duct the experimenter places himself in front of a mirror, with the mouth brilliantly illuminated and the tongue turned up against the roof of the mouth. The two papillæ which mark the entrance of Wharton's duct will then be seen, one on each side of the frenum linguæ, the orifice of the duct being marked by a little dot upon their upper surface; if now the flow of saliva be stimulated a canula may be inserted into the duct, but you observe, less readily than in the case of the parotid. This other specimen has been drawn off by means of a glass syringe. It is clear, more viscid than that of the parotid gland, and also alkaline. Its viscosity is, however, subject to variations; when an acid stimulant is employed, a more fluid secretion is poured out than when a mechanical irritant is substituted.

In man it also has the power of converting starch into sugar (experiment). In the dog this power is less than that of the mixed saliva, while it is entirely absent in that of the cat; in fact, in all carnivora the diastatic action of saliva is feebly marked.

The sub-lingual saliva has never been isolated in man, while in dogs it is doubtful whether the small glandular lobe which Bernard termed the sub-lingual is really a distinct, separate gland, or a lobe of the sub-maxillary; it is true that it has a separate duct and furnishes a more viscid saliva.

Before passing on to the study of the nervous system, I will take the opportunity of showing you an example of the elective excretory functions of glands. Among the various substances which can be introduced into the blood, some, as for example iodine, appear almost instantly in the saliva, while others, such as iron, do not enter it without the greatest difficulty. After chloroforming the rabbit, fastened on the Czermak's holder, in which you have seen me divide the parotid duct, I will expose the femoral vein and inject into it 1 cc. of a saturated solution of the iodide of potash, together with an equal

amount of a 1 per cent. solution of the ferro-cyanide of potassium. The bleeding which resulted from the operation on the parotid duct has now ceased, and you see that acetic acid applied to the tongue causes the appearance of a drop of saliva in the wound. Now how can we recognize the presence of either of these salts in this secretion? Let us first look for the iodide. You remember that I showed you that the saliva prevented the coloration of starch by iodine, so, evidently, here we must employ some other reagent. You also know, however, that this interference was due to the oxidation of the iodine by the saliva; so if we can overcome that result the test will succeed. I have here a piece of filter paper soaked in starch mucilage; I place it over the wound so as to come in contact with the drop of saliva, but there is no blue color found. I will let fall a drop of nitrous acid on the paper, and instantly there is a decided blue, showing the iodine has been eliminated in the saliva, probably in the form of hydriodic acid, and when deoxydized by the nitrous acid, as free iodine, colors the starch. Now let us look for the ferro-cyanide. The test for its presence is its formation of Prussian blue with a persalt of iron. I will place a piece of paper moistened with a 10 per cent. solution of the perchloride of iron on the wound, but there is no coloration.

Let us now look to the urine. Urine can be readily collected from rabbits by holding them over a large beaker, compressing the abdomen with one hand, and with the thumb of the other pressing the bladder well down into the pelvis. The urine is thus forced out and may be collected. I will now test a few drops of the fluid thus obtained, with the 10 per cent. solution of the chloride of iron, and there is a dense blue formed. It, however, gives no reaction with the nitrous acid and starch mucilage. Another very pretty way of showing that the iodine has been eliminated by the salivary glands and the ferro-cyanide by the kidneys, is to kill the rabbit by puncturing the medulla through the occipito-atloid membrane. I will now dissect out the parotid and sub-maxillary glands, and place them in the starch mucilage with the nitrous acid. The gland becomes bright blue. I will now remove one kidney, divide it through the hilum, and place it in a solution of the perchloride of iron, and Prussian blue is developed immediately in its gland substance, and on its surface. You have thus seen in a marked light the elective eliminative power of the salivary glands for iodine, while the kidneys excrete with especial facility the ferrocyanide of potash.

Bernard, however, who was the first to remark this fact, has shown that the salivary glands will excrete iron when combined with iodine, as the iodide of iron, and when a local plethora, so to speak, is created in the salivary glands by injecting the prussiate of potash into the carotid artery, we can then find it in the saliva. Another remarkable fact in this connection is that if a quantity of iodide of potassium be given to a dog, traces of it may be found in the saliva, sometimes for weeks; the iodide is swallowed and then excreted in the saliva, which being swallowed again gives up the iodine to be absorbed, and again excreted, and so on. Absorption by the salivary glands is also possible, and sometimes occurs with great rapidity; if a solution of iodide of potassium be injected into the parotid duct of one side, it is almost immediately eliminated by the opposite gland.

COMMUNICATIONS.

INVERSION OF THE HUMAN BLADDER.

BY REUBEN A. VANCE, M.D.,
Of Gallipolis, Ohio.

(Concluded from page 94.)

The three cases following are abstracts which embody the important facts relative to the three instances of vesical inversion which Mr. Croft embodied in his paper on that subject.

CASE 3.—Dr. Murphy's Case, reported in the *Liverpool Medical Gazette*, and quoted in the *London Medical Gazette*, 1833, page 525.

"Jane R., aged four years, admitted July, 9th, 1829, into the Meath Infirmary.

"Presented the following appearances on admission: A pyriform tumor, the size of a small hen's egg, depending between the upper portion of the labia pudenda, of the color of dark mahogany, the base below, apex above; the little finger in rectum communicated no motion to tumor, nor could anything unnatural be detected. On raising the tumor toward the pubis, the vagina was seen, but the meatus urinarius could not be traced. The orifices of the ureters were not discovered until a very slight traction of the tumor downward rendered the inversion complete. A small silver probe passed up each orifice, on being withdrawn, was followed by urine almost devoid of smell or color.

"Replacement.—The neck of the bladder was steadied by the thumb and fore-finger of the left hand, and the fundus having been pushed upward by the end of a gum-elastic catheter, its

reinversion was easily effected. A catheter was retained thus for a few hours, by an assistant.

"Some tenderness of the pubic region followed, attended by vomiting; leeches, warm baths, and castor oil were prescribed. Those symptoms quickly vanished. Discharged, cured, July 17th, (eight days)."

CASE 4.—Mr. Crosse's Case, reported in the *Transactions of the Provincial Medical and Surgical Association*, N. S., 1846, page 185. Mr. J. Green Crosse was Senior Surgeon to the Norfolk and Norwich Hospital.

"In the year 1829 a highly respected colleague of mine, since deceased, received under his care a healthy-looking female child, aged between two and three years, on account of a tumor about the size and shape of a walnut, projecting visibly at the external labia pudenda. It was of a florid red color, and somewhat granulated on its surface, so as to resemble a large strawberry; and the surgeon entertained a notion that it was a vascular tumor, which might be removed by ligature, on which account he requested me to inspect it. After examination, I expressed my doubts as to its being a vascular tumor, and dissuaded him from applying a ligature. Toward the posterior part of the tumor, on its sacral aspect, was an aperture conjectured to be the urethral orifice. A very small female catheter easily entered this aperture, and passed along a channel a little to the left of the median line. Urine distilled in drops from the catheter; there was no gush, although the instrument entered so far that we concluded it must have reached the bladder. Besides what oozed from the instrument—tinged with blood—there was an oozing of urine from another source, which was unexplained until a second examination, a few days afterward, on my casually coming to the patient's bedside, just as the surgeon was prepared to apply a ligature to the neck of the tumor. I now found, concealed in a fold of the tumor, near the posterior junction of the labia, two orifices, not far asunder, from which urine oozed, and which were evidently the vesical terminations of the ureters. On pressing the tumor firmly, as if to reduce it, like a hernia, I found it yield, and pass gradually behind the symphysis pubis, and within the labia; and under a continuance of the taxis it all retired, leaving the external parts in their proper shape and position. A passage remained, through which the tumor on retiring had taken its course; which was actually the dilated urethra, into which I could, and did, introduce my little finger until it fairly entered the cavity of the displaced bladder.

"*History.*—It was stated that the tumor had existed for a considerable time, and had always been attended by stillicidium urinae; also, that it had been once replaced, but had again descended shortly before coming under my observation. During the time it was under my notice no relapse took place. After an interval of sixteen years no relapse had occurred, but she was constantly troubled by incontinence. I accomplished reduction by returning first that part of the bladder next to the urethra, and lastly the fundus."

CASE 5.—Dr. Lowe's Case, reported in the *Lancet* of March 8th, 1862.

"M. A. H., aged 2½ years, fine, healthy, but very irritable child. Admitted in West Norfolk and Lynn Hospital, under Dr. John Lowe, Nov. 10, 1859. On examination a vascular looking tumor, the size of a large walnut, was found projecting through the external labia. When the little patient cried the tumor became more injected and increased considerably in size; at the same time a gush of urine took place. On closer inspection the mass was found to be seated at the orifice of the urethra. On making gentle pressure the tumor receded under the finger, and presently disappeared altogether within the urethra, and the forefinger could readily be passed into the bladder. I had, therefore, no difficulty in diagnosing an inversion of the bladder. From the statement of the mother it appeared that the child had been subject to incontinence of urine from its birth, and that from the time it was two or three days old a small substance had been observed to protrude during a fit of crying or straining. Each effort of this kind was followed by a flow of urine, and the child's condition, from this cause, was truly pitiable. The thighs and labia were excoriated, and the latter, besides being swollen and indurated, were covered with numerous pustules. Until the age of two years the tumor had receded as soon as the straining ceased, but latterly it constantly protruded, more or less. Treatment by actual cautery. She was eleven months under treatment. Result, no relapse, but some degree of incontinence.

The following interesting account of a case of vesical inversion in an adult is worthy of notice in connection with the foregoing. My abstract is from the notes made by a friend who was aware of my interest in these cases.

CASE 6.—Mr. Henry Johnston's Case of Inversion of the Urinary Bladder during Pregnancy, reported in the *Dublin Hospital Gazette*, of April 16th, 1860.

"On the evening of Sunday, Aug. 8th, 1859,

was called to see Mrs. M., aged 20, who was threatened with miscarriage. Found her suffering from "pains," and such an amount of tenesmus that she wanted to remain constantly on the night-chair. Was told there had been great hemorrhage, and that the "waters" had discharged yesterday; she was nine months married, and thought herself four months pregnant. There had been vesical irritability for weeks, but she did well until Friday, the 6th, when, after lifting a box, she felt great uneasiness in her back, attended with frequent and urgent desire to pass water. These symptoms grew more urgent on Saturday; she was unable to retain her urine, vomited freely, and was at ease only when on the night-chair. I there found her on my first visit: it was only after repeated urging that she went to bed. On attempting a vaginal examination, she complained bitterly of the pain, and grew so impatient that my attention was drawn to the hyperæsthetic state of the genital passages. On visual inspection I found a soft, fluctuating tumor, the size of a pear, pyriform in shape, extending as far down as the os externum of the vagina, and feeling like a bag of membranes. My finger passed from the base along the narrow, neck-like portion of the tumor into a small, narrow cavity, which I considered was the dilated os uteri; being also under the impression that the narrow, neck-like portion of the tumor was the cord attached to the ovum. I followed up this cord into a cavity which I presumed to be that of the uterus. My patient now insisted on being allowed again to remain on the night-chair, and complained of her inability to bear any further examination. Being under the impression that the uterus would expel its contents, and there being no hemorrhage, I gave some general directions and returned home. Called again the morning following (Monday) and found her in much the same state; she slept none during the night; pulse rapid and excited; vomiting attacks recurring frequently. Patient unwilling to submit to examination. Administered an anodyne and returned during the evening with a medical friend, Dr. Bryce, to whom I communicated my fears of miscarriage. Dr. Bryce examined the parts and discovered that he could pass his finger behind the tumor, into the vaginal canal, where he felt the os uteri still undilated. He was puzzled, and after suggesting that there might be a malformation, finally decided that the tumor was a vaginal vesicocoele—a prolapsed bladder—and not a bag of membranes. This discovery of the vaginal canal and the os uteri cast new light on the case. I re-

examined the tumor and found that it would yield to gentle pressure, continuing which it retired upward through the cavity which I had supposed to be the os, into the cavity which I had supposed to be the uterus, but from which flowed a small quantity of urine. The true nature of the case now, for the first time, became manifest, and I saw that I had to deal with an inversion of the bladder, that the opening through which I returned the tumor was the "meatus urinarius," dilated to such a capacity as to admit two fingers. An ocular inspection of the parts confirmed my diagnosis and satisfied Dr. Bryce as to the nature of the case. Immediate and decided relief followed the reposition of the inverted bladder: the vomiting ceased; the pulse fell; our patient's expression changed; the pain in the back ceased; the urgent symptoms of vesical irritation were relieved; and sleep was speedily induced. Some hours subsequently I revisited her; there was no return of the inversion; on the contrary, the bladder contained so much urine that I passed a catheter and relieved her of a quantity of bloody urine. An anodyne was administered and perfect quiet enjoined. On Tuesday she was quite easy, although she was still voiding blood and mucus from the bladder and there was constant dribbling of urine. Under treatment these symptoms subsided, and when she passed from under my observation (December 3d, 1859) she was free from any vesical uneasiness, and was looking forward to an early confinement."

Mr. Johnson, the reporter of the following case, mentioned that the late Professor Simpson had called his attention to two cases of inversion of the bladder reported in Cruveilhier's "Pathological Anatomy." He also spoke of the case which Dr. Meigs relates in his work on "Diseases of Women." This was a case of inversion of the bladder in a little girl, three years of age, in which the nature of the "growth" was not recognized until all the preliminaries for an operation to remove the tumor had been arranged.

In glancing over the foregoing histories the attentive reader will note the complication which renders Mr. Croft's case different from the others—the rupture of the bladder. Dr. Lowe reports that when his patient cried "the tumor became more injected, and increased considerably in size." A gush of urine likewise took place at the same time. In a note to Mr. Croft Dr. Lowe says that he is sure the fluid was urinous, and that it came from the ureter. In referring to his own case Mr. Croft says: "I cannot think the fluid which I have described as escaping in little

Lewis's case was ejected in a fountain from either of the ureters, 1st, because during the projection and tension of the bladder those orifices must have been tightly closed; 2d, because the spot at which the fluid leaped out bled at the time, and became clotted immediately after; 3d, the rupture was situated above and in front, whereas the orifices of the ureters must have been behind and below. Now, Dr. Lowe states in his letter that he watched "the escape from the ureters, which were distinctly visible." If it did not come from either of the ureters, whence did it escape? It could not have come from the bladder, for that was already turned inside out.

"With regard to the nature of the fluid: had it been *urinous*, I think Mr. Stewart would not have failed to find evidence of its being so, either chemically or microscopically. I thought at the time, and I see no reason to change my opinion, that the fluid was serous, and came from the peritoneal cavity. I think the bladder, in becoming inverted through the urethra and meatus, carried its partial peritoneal coat with it. That being the case, a hernia of the peritoneum was formed, a hernia through the urethra and meatus. I think this sac became constricted by the meatus, just as an inguinal hernia suffers constriction by the internal abdominal ring; the peritoneum, under these circumstances, poured out, as it would do in an inguinal hernia, serous fluid, and that fluid gradually distended the pouch. Violent expulsive efforts of the abdominal muscles at last caused the rupture which I witnessed."

Mr. Croft very truly says that the after absence of peritonitis militates but little against the occurrence of rupture of the bladder—neither does it invalidate the theory that the peritoneum had been herniated, and the fluid serous. That individuals may recover from vesical rupture, *per se*, we all know. Death, when due to this accident, is always owing to secondary implication of the peritoneal cavity, from urinary extravasation. In Mr. Croft's case the vesical wound was small, the urine flowed freely away, and there were no evidences of secondary implication of any portion of the peritoneal cavity. Under such circumstances it would be surprising had not recovery ensued with great rapidity.

If the reader will but review the history of those of the preceding cases in which the bladder was inverted in infants and children, he will find that the following are the symptoms which should lead the practitioner to diagnose an *inversio vesicæ*, and to distinguish such an affection from a solid polypoid growth:—

A tumor from the anterior portion of the os—

tium vaginae situated beneath the clitoris and between the labia, which is pear-shaped, red, vascular and elastic; the urethra not apparent, but both ureters may be distinguishable, and a prolonged inspection will show that they distill urine; and a history of urinary incontinence preceding as well as accompanying the advent of the tumor.

The presence of the foregoing symptoms should cause the practitioner to repeat his examination, and subject his patient to a prolonged observation, before diagnosing any other affection. A physical exploration will generally suffice for diagnostic purposes, in the majority of cases. In fact, when once the surgeon has had his attention drawn to the existence of this rare lesion there is but little danger to be apprehended—it is only in cases where the observer has no knowledge of this condition, that harm may come from a hasty operation. When the writer remembers how narrowly his own patient escaped having a ligature thrown around its bladder, he may be excused for believing that others may be similarly deceived. A knowledge of the possible existence of this lesion will prevent any one from occupying the embarrassing position in which he was then placed, and if this paper succeeds in diffusing an acquaintance with the fact that the human bladder may become turned inside out, the writer will be amply repaid for his trouble in its preparation.

HOSPITAL REPORTS.

PHILADELPHIA HOSPITAL.
SURGICAL CLINIC OF DR. JOHN H. BRINTON.

REPORTED BY DR. W. M. ANGNEY.

Frostbite.

GENTLEMEN:—The extremely cold weather which has prevailed during the last few days affords me an opportunity of bringing before you two or three well-marked cases of frostbite. You have all doubtless been made familiar, by narrative, with the general constitutional effects resulting from prolonged exposure to a low temperature; of the benumbing effect produced upon the senses, and the desire to sleep, which once yielded to, may prove the sleep which knows no waking. The history of arctic exploration and mountain travel abounds with these accounts. The effect of extreme cold upon the living tissues is, to produce at first a sense of numbness in the part, accompanied by a shrinking of the tissues. The circulation through the capillaries is interfered with, and recession of blood from the surface to the deeper structures results. Hence it is, that where the whole body is exposed for any length of time to cold, as in the cases above referred to, accumula-

tions of blood occur in the central organs, especially in the brain and lungs, and coma and fatal sleep take place.

The influence of extreme and protracted cold upon parts locally exposed is felt precisely in the same way. The blood is driven from the part; it shrivels, shrinks, changes color, and loss of sensation and motion occurs. You have seen me, over and over again, apply an Esmarch's bandage before operation, and you will doubtless remember the appearance of the part when the elastic roller is unwound. The extremity looks marble white, the blood has vanished from the finger ends, the rosy tint dependent upon the circulation has fled, the temperature is reduced. The same phenomena are observable when the fatal death-chill creeps upward upon one who is moribund, and the icy hands and feet foretell too plainly approaching dissolution. These conditions are analogous to the effects of local cold; the causes may be different, but the results are not unlike, and depend upon the withdrawal of the blood from the peripheral tissues. Such is the first local effect of cold, it lessens the vitality of the part; let the depressing effect of the cold continue, and the part dies. Here again you can trace the analogy of an Esmarch's application. Harmless in the surgeon's hands, for a brief application, it also, if too long continued, may produce disastrous consequences: but of this I have already spoken to you more than once.

From these brief words, and with this idea of the pathology of gelatio or congelation, in your mind, you can readily imagine the course and conduct of a frostbite. Take a minor degree of frostbite. The part is not altogether frozen; it is not destroyed; its vitality is simply lessened. What will be the result? reaction—a return of the circulation in the tissues, to a degree greater than normal. In other words, the depression is followed by inflammation; the whiteness or lividity vanishes, and is succeeded by a fiery red, and the numbness gives way to a tingling or burning heat. And just here is the danger; the inflammation may run too high, and result in the death of the part—gangrene. The surgeon's efforts must be directed to limiting and controlling this reaction, to keeping it within proper bounds, thus preventing the final destruction of the parts.

But the local effects of cold may not be limited to a temporary lowering of the vitality of a part. It may go further, and entirely destroy it; despite the best endeavors no reaction may occur in the part; it is mortified and dead. When such is the case, the substance of the frozen extremity gradually shrivels more and more, becomes dark, and eventually black, and the line of demarcation is developed between the living and the dead tissues. In one of the earlier sieges of our late war, where the men were greatly exposed, sleeping under the enemy's guns, without fires, and exposed to a drizzling sleet, I witnessed a number of such frostbites. Many of these occurred, if my memory serves me, from exposure during the night: and here let me say, that mortification, of the toes especially, may result from a moderate degree of cold, if it be at the same time accompanied by exposure to wet. I have known it to occur in one case, when a wounded man slept with his feet projecting from under the tent cover; the drip-

pings of the tent falling upon his instep produced gangrene of both feet, much as if the agent had been great cold alone. As you would naturally suppose, the parts most apt to suffer from frostbite are those which are most exposed, such as the ears and nose, the hands and toes. Pressure, such as that produced by a tight or ill-fitting boot, will also contribute to the same result.

In the next place, gentlemen, let us consider the treatment of a frostbite. The indication is to bring about reaction, slowly and moderately, to increase the vitality and restore the circulation to a member which has been almost frozen; and at the same time to do this so gently and gradually that the line of inflammation may not be reached. How is this thawing process to be effected? I answer, by means of cold frictions; and by very carefully avoiding exposing the sufferer to too high a temperature, as to the direct heat of a fire. The patient should be treated in a cold room, and the parts should be rubbed with snow, pounded ice, or cloths dipped in cold water, and this should be kept up until the reaction is fully established. I would not employ stimulant or warm lotions, at all events, in the commencement of the treatment. If you should find that the effect of the cold is very persistent, you may, after using the cold rubbing, rub the parts with whisky, or some weak camphorated tincture, but it will be better for you to depend upon the cold applications as far as possible. If, when the reaction shall have been fully established, a tendency to slough in any portion of the integuments be manifested, the usual treatment in such cases becomes applicable. I generally employ cloths dipped in carbolated oils, and applications of that nature. When mortification is evident, no attempt should be made to remove the parts until the line of demarcation be fully established. Should an opposite course be pursued, and too early an amputation be resorted to, the result would most likely be sloughing or gangrene of the stumps. *Festina lente* must be your motto. Wait until Nature shall have clearly indicated to you her line of separation, and operate through it.

From what has been said regarding the pathology of frostbite, you would naturally expect that such cases would be most common in latitudes where the thermometer dips the lowest. This does not, however, appear to be altogether the case, for this affection would seem to depend somewhat upon changes and alterations of temperature, as well as upon the absolute degree of cold. As I have already intimated, cold combined with moisture, as when sleet and rain follow a cold snap, peculiarly dispose to the occurrence of frostbite. Among the inhabitants of arctic regions frostbite undoubtedly occurs, but yet not as frequently as one might suppose, and I am told by a medical friend from Maine, who practices largely in a region where the thermometer often falls to between 30° and 40° below zero, that he has never seen there a case of frostbite. We know very well that the debauchee, and those whose constitutions have been broken down by drunkenness, are most liable to the occurrence of the affection in question, and that its frequency is influenced by the character of the life of the individual. It may, therefore, be, that the strin-

gent prohibitory law of Maine may serve to protect her moral citizens against the rigors of her winters.

From these remarks you will, I think, comprehend the nature of the cases before you. This man has been walking in the snow, his feet being insufficiently shod. He tells us that they became very cold, and continued to grow colder and colder, until they were quite benumbed. He afterward rubbed them until they became warm, and they then itched, and tingled, and burned him. The pain became so great that he could not walk, and he was then admitted to the hospital. Notice, if you please, the condition of the parts, and the blackened tissues around the ankle, and along the sides of the feet. This patient has evidently suffered from a low grade of frostbite, resulting in superficial gangrene. The limits of the gangrene are determined, the line of demarcation is being formed, and the slough is separating. Here is another patient with a like condition of the pulpy parts of the fingers of both hands. This man makes his living by selling cakes in the streets, and he, too, has been, consequently, subjected to much exposure, and you know how cold the weather has been. The only treatment to be attempted in these cases is to favor the separation of the sloughs, let nature do her work, and then to remove with a scissors the dead parts. I shall direct these cases to be dressed with lint dipped in carbolated oil. If the sloughs were very extensive I might use charcoal poultices, but the oil dressings will answer very well here.

Coalgia.

The next case is one of peculiar interest, inasmuch as it is typical of many you will meet with hereafter in your practice, and I am indebted to the courtesy of my colleague, Dr. Linn, for the opportunity of bringing the patient before you. I have not yet examined the case, and we will therefore study it together. This little girl is ten years of age. Some months ago she was noticed to limp in her walk, to drag or trail her foot after her, and to take less interest in playing than was her wont. In a little while she complained of slight pain in the inner side of the knee, on the front of the thigh, and over the knee. She "started in her sleep," to use the common expression, complaining, at the time, of pain. The pains in the knee and thigh gradually increased, and she became unable to walk. She has been in the hospital five or six weeks. Look at her now, and notice the appearance of the thigh; it is flexed on the abdomen, adducted, or drawn inward, and apparently slightly shortened. When I attempt to rotate the thigh, she screams with pain, and so also when I extend the leg. I tap the knee slightly with the palm of my hand, and you hear her almost shriek with suffering. She refers the pain to the hip, and front of the thigh, and especially to the inside of the knee. When I place my hand broadwise on the buttock, around the upper part of the thigh, and in the neighborhood of the joint, I find that the temperature is greater than natural, and this is very evident when, by my touch, I compare the temperature with that of the sound limb. I roll the child gently on to her sound side, and ask you

to observe the buttock of the diseased limb. You see that it is flatter than natural, apparently broader than its fellow, and that the crease between the buttock and the thigh, the gluteo-femoral crease, as it is called, is gone. On comparison with the sound side, these conditions are very evident.

I now replace her on her back, and employ a manoeuvre much insisted upon by Dr. Sayre. I take the sound limb, flex it on the abdomen, bring it suddenly straight, and the child does not flinch, or raise the pelvis from the bed. Let me do this with the limb of the diseased side, and watch the result. She has some pain as I carry this thigh upward, but when I attempt to bring it down suddenly, by extension, into a straight line, she throws her pelvis upward, and suffers so greatly, that, for humanity's sake, I must desist. Here, then, you have a characteristic train of symptoms. Limping, dragging the foot, pain at the knee and in the thigh, adduction of the thigh, apparent shortening, flattening of the buttock, destruction of the gluteal crease, deepening of the lumbar depression, and the result in the extension test which I have just shown you. What does all this mean? Simply this. That this child is suffering from hip-joint disease in the second stage. In its fully developed phase, this affection is unmistakable, but in its very incipency its diagnosis is at times difficult. On a correct diagnosis, however, the treatment must depend, and on the treatment the future of a child, for weal or for woe. I shall, therefore, ask your attention for a very few minutes to the subject, and avoiding theoretical topics, which may be still *sub judice*, I shall examine this case from a practical clinical standpoint.

Hip-joint disease, coxalgia, morbus-coxarius is a very common affection. It occurs in every class of life, among the rich as well as among the poor. By some surgeons, the essential element or predisposing cause of the disease is considered to be a scrofulous tendency or diathesis; others maintain that this dyscrasia is by no means essential to the occurrence of the affection, but that it may result from simple irritation. While I do not pretend to speak over positively on this subject, I must say that I incline to the former view, at all events, as far as the great majority of cases is concerned. Be the cause what it may, the disease is unfortunately too often encountered.

One classification of hip joint disease which you will find in the text books is based upon the starting point of the trouble, and the chief locality of the parts involved. Thus the femoral, arthritic, and acetabular varieties are spoken of; according as the inflammation begins at, or involves in the main, the head of the thigh bone, the ligamentum teres and the soft structures of the joint, or the acetabular cup. Coxalgia is also usually divided into three stages; the first, when there is only a slight degree of limping or lameness, and little or no pain; the second stage, when the inflammatory phenomena are well developed, as in the case before you; and lastly, the third stage, when suppuration has taken place, and when abscesses have formed in and around the joint. In the interests of treatment it is all important that your diagnosis should be made early, and

accurately, and that the proper rest treatment should be promptly instituted. As Mr. Hilton has well said, in his charming lectures on rest and pain, if a child limps, the lameness must be due to some cause; and if on examination the surgeon finds no evidence of disease in the foot, ankle, or knee, the probability is that the trouble is at the pelvis, or hip joint.

The grouping of the symptoms at this stage of the examination is always important. First of all we have the increased temperature and the pain. The latter is well explained by the nerve supply to the hip and its neighborhood. I will try and show you what this is. Here is a sketch on the blackboard, based on Hilton's outlines; and we must thank this surgeon, or rather his memory (for he has recently died), for the care and precision with which he has directed the attention of the profession to this matter. As you see in this diagram, the nerve supply to the hip joint is threefold. In the *first* place we have the obturator nerve, as it passes down the inside of the thigh, sending off a branch to the ligamentum teres, and to the capsular ligament. As you may remember, the terminal branches of the obturator are spent upon the integument of the inside of the knee and leg, a branch also being given off to the synovial membrane of the knee. The *second* nerve to the hip joint, as stated by Mr. Hilton, is a branch from the anterior crural to the front of the capsule; the peripheral distribution of the anterior crural being to the skin of the front and inside of the thigh, and as far down as the inner side of the leg and foot, and also one or two articular branches to the knee joint. The *third* nerve to the hip is a branch from the sacral plexus, an articular filament to the back of the hip joint; the remaining strands of the plexus being sent to the muscles and integument on the back of the leg.

In order to give due weight to the pain symptoms in coxalgia, it is well to recollect this nervous distribution, for from it, it may not be impossible to locate the point of pathological action. When pain exists on the inside of the knee joint, as it most frequently does, the inference is fair that the form of coxalgia is arthritic or femoral in its character. On the other hand, the presence of pain in the posterior portion of the limb, or high up in the region of the buttock, would lead to the suspicion of a possible acetabular involvement. Perhaps it would be hazardous to base a diagnosis on these phenomena alone; yet at the same time due weight should be given to them in forming the clinical judgment of a case. In the child upon the table, succussion upon the foot produces an acute darting pain, not only upon the inside of the knee, but also on the integument of the front and outer portions. I therefore am justified in believing that the morbid action involves the ligamentum teres, the soft structures of the joint, and also the head of the thigh bone, and the capsular ligament in front. I find, also, that pressure upon the trochanter causes pain, thus further substantiating the diagnosis of femoral as well as arthritic coxalgia.

I will next draw your attention to the position or attitude of the thigh of the diseased side. You observe that the thigh of this child is flexed

upon the pelvis, and at the same time powerfully adducted. If you will make a ligamentous preparation of the hip joint, and then trephine the acetabular cavity from the inside of the pelvis, you will have an excellent peep-hole to study the tension of the soft structures of the articulation. Here is such a preparation, and if you will examine it after lecture, you will find that flexion and adduction of the thigh relaxes and relieves all strain upon the ligamentum teres and its associated soft parts. In this position of an inflamed hip joint the ligaments are put at rest, and consequently are freed from pain. Hence nature causes the limb to assume this attitude by the action of the psoas, iliacus, and the adductor muscles. The shortening of the limb, which was once regarded as a symptom of morbus coxarius, is probably fictitious. It arises from the drawing up of the ilium of the diseased side, and the twisting or tilting of the pelvis to the opposite side. By this elevation and adduction a patient, when standing, in the early stage of the disease, rests easily and comparatively painlessly, upon his toes, and at a later period of the affection, when confined to bed, sustains with his well foot the weight of the diseased limb, and guards and protects it from shock or succussion when moving in bed. I will now ask this little girl to move on her bed, and as she does so you can easily understand the phenomena I have just described to you. You can see how, with her healthy foot, she raises, and if I might use the expression, handles, that of the affected side.

We have thus, I think, clearly made out that this poor little girl is suffering from hip joint disease in the second stage. The pathognomonic symptoms are present, and I have endeavored to make them intelligible to you. To sum them up, she has pain on the front and inside of the thigh, and over the knee, increased on succussion. The thigh is flexed and adducted, the gluteo-femoral crease is effaced, the temperature of the joint is elevated. There is apparent shortening; the limb does not respond to the extension test, and its attitude is characteristic. There is no doubt as to the nature of her trouble. What can we do for her? I answer in one short sentence: "Put the parts at rest, complete and absolute rest." This is the first great indication to be observed. At the same time build up her constitution by general tonics, and by placing her in the very best hygienic conditions attainable under the circumstances.

I shall, therefore, advise that this little one shall be fully etherized, and then that the limb shall be brought down straight, into the extended condition. An adhesive plaster extending strip should then be applied, as for fracture of the thigh, and extension should be kept up by a light weight, say a pound or two; this weight to be increased or decreased as occasion may demand. By raising the foot of the bed the tendency of the patient to slip downward can be readily counteracted. From the nervousness of this little girl at the present moment, and the evident irritation of the parts, you might suppose that such a dressing could not be endured. But experience teaches us to the contrary, and you will, I am sure, hereafter, be both surprised and delighted at witnessing the relief afforded to a

suffering child by such an application. In a very short time a little patient will be accustomed to this dressing, and will be unwilling to have it interfered with or removed. A child learns very soon what is most comfortable for him, and with this apparatus well applied will remain quietly in bed, playing with his toys, or amusing himself with books, happy and contented. I can recall many such cases to my mind, where children confined to bed for hip disease have lost the expression of anxiety and pain so characteristic of the malady, and have grown fat and almost rosy. The period during which it may be necessary to keep a child thus confined to bed varies greatly in different cases.

The best rule, perhaps, is to keep on the extending apparatus until the acute inflammatory symptoms shall have passed away, and the irritability of the parts shall have subsided. An apparatus with the rack and pinion extension may then be adjusted, and the patient allowed to leave his bed; or resort may be had to the plaster casing, applied by means of a roller bandage. You will, of course, understand, that while this mechanical treatment is being carried out it is desirable to build up the patient's constitution in every way, by iron, and quinine, good diet, fresh air, and by such tonic and hygienic measures as may seem most appropriate to the individual case.

I shall endeavor to bring this child before you at the expiration of a month from the present time, when you may have the opportunity of witnessing the result, and I trust it will be a favorable one, of the treatment which will be instituted in her case. * * * *

NEW YORK HOSPITAL.

DISEASES OF THE SKIN.

BY L. DUNCAN BULKLEY, M.D.

Reported for the MEDICAL AND SURGICAL REPORTER.

GENTLEMEN:—In pursuance of the plan which I have laid down for this course, I will to-day, as usual, devote the first half of my hour to a somewhat rapid glance at the prominent characteristics and the most important points in the treatment of some of the cases which are presented at the clinic; reserving a more systematic and detailed consideration of the various affections in question for the latter half, or didactic portion, of my lecture.

Psoriasis.

You remember this boy, who was before us last week, and who is suffering from well-marked general psoriasis. To-day I propose to commence a new treatment in his case, and in order to note what real effect it has here, I shall apply it to but a portion of the body at once. The agent which I am going to employ is chrysophanic acid, which seems to be quite a marvelous remedy in many respects. It is well to notice, in the first place, however, the improvement which has already taken place in the eruption under the exclusively internal treatment which the patient has been using for the past three weeks. It has lost much of its red character, there are much fewer scales, and they come off

much more readily. But when I scrape the surface of diseased tissue, even where there is not much scaling, those of you who are sufficiently near will perceive that we still find beneath the ordinary micaceous scales the little membrane or pellicle, entirely distinct from the scales, which slips off readily, leaving the characteristic bleeding corium of psoriasis. The evidences of improvement may be briefly summed up as follows:—

- (1) Less congestion.
- (2) Borders of diseased patches less clearly defined.
- (3) Scales fewer and more easily detached.

The patient will now be directed, every night and morning, to make active friction over the surface of the left arm only, with coarse soap and water, and then to rub in thoroughly an ointment containing the chrysophanic acid, half a drachm to the ounce. It may be used much stronger, even up to two drachms of the acid to an ounce of ointment, but I prefer beginning with a milder strength, as his skin is delicate, and I have seen very considerable inflammation excited by this agent. You will remember that this ointment is to be prepared by melting the excipient, and dissolving the chrysophanic acid in it, stirring until cold. In case it should give him much pain, however, the application need be made only once a day. In addition, he will continue to take internally, as before, the acetate of potassa, as I believe it to be one of the very best means at our command for relieving cutaneous congestion.

The accounts of chrysophanic acid are that, of itself, it absolutely cures psoriasis. This statement has been made by reliable observers, who, in certain cases, have noticed no return of the disease for a year, or a year and a half, after the remedy was discontinued. Whether, in such cases, the eruption will finally return or not, there has not yet been sufficient time to determine; but I caution you against ever promising too much in psoriasis. At all events, it can certainly be said with truth that more speedy results can be obtained by the use of this agent than from any other that has ever been tried. The only disadvantages connected with the employment of chrysophanic acid are, that it sometimes causes considerable erythematous inflammation of the healthy skin, and that it stains the surface of a dark hue, and also stains the clothing badly; but if in any case the patient can be persuaded to shut himself up for a week or so, in order to have the remedy thoroughly applied, the results are, indeed, wonderfully satisfactory, as I can abundantly testify.

I now ask you, for a moment, to look at this other patient, a man of thirty-five, who is also suffering from psoriasis. While the eruption presents some differences from that in the other case, you will observe the same micaceous scales, and, on scraping, the same little membrane and readily-bleeding corium beneath. On the back there is very nicely shown a variety of psoriasis known as *gyrata*, in which the affected spots have a margin covered with the white scales of the disease, with a healthy centre.

Psoriasis in Stage of Decline.

In this woman you see a psoriasis which is now

yielding nicely to treatment. Here the eruption has taken to a great extent the form of rings, or grouped papules; so that in this respect it bears considerable resemblance to a syphilide. You know that, as a general rule, psoriasis, by preference, attacks the extensor surfaces, while eczema affects the flexors, but in this case the latter are markedly the seat of the disorder. Fortunately, psoriasis usually spares the face; but this case is also an exception to the general rule in this respect, and I want you, therefore, to examine the disease very carefully here, as you may not have the opportunity of seeing another similar case. You perceive that the neck and face are each affected on both sides, and that in this location the disease resembles eczema; though in eczema you would not have these separate, circular, red papules, nor would the margins be as well defined as here. The patient is now getting along very satisfactorily, and the eruption rapidly fading.

Syphilitic Onychia.

The next case I present to you is one of double syphilitic onychia; in which you will observe that the man has lost the nails of both thumbs.

When the patient was before us for the first time, two weeks ago, as some of you will remember, there was suppuration going on beneath the nail, accompanied by a very fetid discharge, but without much inflammatory action. These are the ordinary characteristics of such an onychia, which is due in reality to a tubercular syphiloderm beneath the nail. Double symmetrical onychia, I may remark, is characteristic of syphilis, and is seldom, if ever, met with (unless under some very peculiar circumstances) except as a result of this disease. The patient is now on the mixed treatment, of mercury and iodide of potassium, and is doing very well, the discharge, as well as the fetid odor, having ceased almost immediately after he was here last. No local treatment was employed at first; but we will now order him an ointment of the *liquor ferri persulphatis* (a drachm to the ounce), which you will find of great service in all forms of onychia. The constitutional treatment will, of course, be continued.

Infantile Urticaria.

Here are two young children suffering from urticaria, or nettle-rash, which is frequently an affection that gives a great deal of trouble in early life, and especially in cachectic children. In the first child, which is about eighteen months old, you perceive merely the results of scratching and none of the characteristic wheals of the disorder; and this, you will find, is not infrequently the case. You see here nearly the whole body, as well as the limbs, covered with scratch-marks, torn papules, and stains.

In the second child, who is a year or so older, the same lesions are also found to be present; so that we might be led to suspect some common cause of the trouble, such as a parasitic disease. But here, if we examine the buttocks carefully, we can make out some of the wheals characteristic of urticaria; and this at once points us to the correct diagnosis. Now there are but three or four diseases which could give rise to such a condition as you see in these children; scabies, phthiriasis, eczema and pa-

pular urticaria. The absence of any marked eruption on the hands and feet, together with the absence of the caniculi or furrows, excludes scabies; phthiriasis corporis (body-lice) very rarely, if ever, affects children so severely as this, nor would you find the legs and arms thus scratched in that condition; and, finally, the papules are too isolated for eczema, while at no place has the scratching given rise to such lesions as we would be certain to find in that disease.

In children urticaria frequently takes this papular form, and this feature has given rise to a name by which it is frequently, though wrongly, known in England, namely, *lichen urticatus*. In regard to the treatment, we must look carefully to the digestive system of the child, regulate the diet, and give such remedies as will be most likely to correct any disorder in the alimentary tract. I know of nothing more generally useful in this connection than acetate of potassa, given in a mixture of rhubarb and soda. Locally, carbolic acid with caustic potash, in solution, will give very great relief; the formula I use being as follows:—

R.	Acid. carbolic,	3j	
	Potasse causticæ,	3ss	
	Aquæ,	f. 3 iv.	M.

The ingredients to be well rubbed together. This may, of course, be diluted if it burns the skin.

Syphilitic Bursitis.

This woman is an old syphilitic patient of mine, who has neglected treatment for a long time, and who now comes back with some small tubercles, of a purplish red, and characteristically grouped together, about the knee, and also what I believe to be a syphilitic inflammation of the *bursa patella*. The bursa, you perceive, is

very much enlarged, as in "housemaid's knee," but the latter affection is usually double, while these latter manifestations of syphilis are apt to be one-sided. Such a grouped tubercular syphilide as you here see (in addition to the bursal trouble) is not uncommon; and the region of the knee is quite a favorite seat for it.

General Papular Syphilide.

Again, I show you the same girl, with early constitutional syphilis, who was presented to you last week and the week previous. She comes back to-day principally on account of a specific iritis, which has recently developed itself. In connection with this case, I should like to call your attention to the fact that it is rare to find a papular or pustular eruption as the first general lesion of syphilis in women; why, I do not know, but the macular syphilide is almost always observed in them, whereas this form of syphilis almost always manifests itself in the opposite sex. As a curious corroboration of this, I believe that every plate of a papular and pustular early syphiloderma that I have is taken from a male subject, while almost all the pictures of macular syphiloderma represent females. It may be that this tendency on the part of females to have this very superficial erythematous rash accounts for the fact that it is often so difficult to trace a history of syphilis in them, for I have repeatedly seen it when it had been quite unnoticed by the patient. But you can hardly imagine that this woman will not bear a vivid recollection of this rash for a long time, nor will she be apt to forget this iritis, which causes her so much distress. You should not neglect to observe the grouped circular arrangement of the papulo-pustules of the eruption, and also the enlargement of the post-cervical glands, which is quite marked here.

(To be Continued.)

EDITORIAL DEPARTMENT.

PERISCOPE.

Chronic Intermittent Albuminuria of Adolescents.

An important affection of the kidneys has, in a recent paper, been named by Dr. Moxon ("*Guy's Hospital Reports*," third series, vol. xxiii, page 283) chronic intermittent albuminuria of adolescents. It occurs in young men, generally between the ages of fifteen or sixteen and twenty-two years, and is characterized by the appearance of albumen in the urine at one time and not at another, but generally in the urine passed after breakfast. The first urine passed in the morning, as well as the afternoon urine, may be completely free, though in some cases albumen is only found in the evening. Dr. Moxon has met with more than twenty such cases of intermittent albuminuria all an-

swering to the above description, and (most important of all) he has seen several of them completely recover. Examination of the various systems of the body gives negative results, but patients are generally brought to the doctor by their friends, on account of their languor and general indisposition to exertion and to joining in the common amusements of society. Dr. Moxon appends a note from Sir William Gull, in reference to one of his cases, in which he mentions that he has himself so often found albumen in the otherwise normal urine of youths from sixteen to twenty-two, that he regards the affection as common, and attributes it to "atony of vessels and nerves." Dr. Moxon, however, thinks it possible, from the large quantity of oxalate of lime which is usually present in these cases, "that morbid matters in the urine itself may induce an active irritation of the kidneys,"

and also that disturbances of the sexual system at this period of life "might be allowed as likely to reflect disturbances to the urinary system."

On Ante-curvature of the Uterus.

At a late meeting of the Obstetrical Society of London, a paper was read by Dr. George Roper, entitled "Some Clinical Remarks on a certain class of cases of Ante-flexion of the Uterus, with certain correlated conditions." The object of the paper was to describe and differentiate a special class of cases of ante-flexion of the uterus. In these cases the abnormal shape of the uterus was a congenital malformation, and was not either an effect or a cause of pathological change in its texture. The axis of the organ was a curve, with the concavity forward; it was not bent at an angle at any one point. There was no softening of the tissues, but on the contrary, rather rigidity, for the organ could not be easily straightened. This condition was often associated with deformity of the cervix and stenosis of the external os and canal. To distinguish this malformation from other kinds of ante-flexion, the author proposed to call it "ante-curvature" of the uterus. He believed this ante-curvature was much commoner than any other kind of ante-flexion, and that, in the unmarried especially, it caused no symptoms beyond those of dysmenorrhœa. He had noticed other kinds of developmental peculiarities, one or more of which generally coexisted with this malformation. These were (1) a short conical vagina, (2) a narrow perineum, (3) a conical distribution of the pubic hair, long hairs on the mammary areolæ, and an unusual amount of hair on the legs and forearms. The deformity of the uterus often gave rise to dysmenorrhœa, from the canal being curved and narrow. The treatment of this was then considered. The author thought incision of the vaginal portion advisable when the cervix was much hooked. Incision of the cervix up to and through the internal os, sudden dilatation of the cervix by expanding sounds, or the use of tents, or intra-uterine stems, or of vaginal ante-flexion pessaries, he considered either inefficient or unsafe, and therefore, objectionable. He had obtained excellent results from gradual dilatation of the cervical canal with metallic bougies; he believed this treatment to be quite free from risk, and therefore preferred it. There was also in these cases a condition of sexual nullity; sexual desire was absent; in many cases sexual intercourse was painful, and there was often vaginismus. He thought the co-existence of these conditions was not accidental, but that they were part of a general developmental defect. The pelvis, too, he thought, partook somewhat of the male type.

The Use of the Forceps when the Os Uteri is Partially Dilated.

At a recent meeting of the Dublin Obstetrical Society, Dr. George Johnston, ex-Master of the Rotunda Lying-in Hospital, read an interesting paper on the use of the Forceps in that institution from 1868 to 1875. Omitting all refer-

ence to that portion of the paper in which the use of the forceps in ordinary cases is discussed, we would draw attention to those cases in which they were used before the os uteri was fully dilated. The forceps were applied in 59 cases, 44 of which were primiparæ, where the os uteri was two-fifths of its normal dilatation, the principal causes of interference being early rupture of the membranes (42 cases), pressure on anterior lip of uterus (8), prolapse of funis (2), and convulsions (2). In 18 the head was above the brim, in 17 in the brim, and in 24 in the cavity. Of the 59 children, 48 lived, 9 were born dead, and two died; and of the mothers, 53 recovered and 6 died. In the second division, where the os was three-fifths dilated, there occurred 71 cases, 58 being primiparæ, the operation being due in 43 instances to early rupture of the membranes, and in 13 cases to pressure on the anterior lip; the forceps were applied in 6 above the brim, in 36 in the brim, and in the cavity 29 times respectively, with the result that 58 children lived, 7 being born dead, and 6 died; while of the mothers, 2 succumbed, one from gastro-enteritis, and the other from uterine diphtheria. Where the os uteri was four-fifths dilated, 39 cases occurred, 26 being primiparæ, with a result of 9 deaths to the children, and one death, a primipara, due to convulsions. Dr. Johnston has long been an advocate for using the forceps in cases of a similar kind, and he states that the results generally are very satisfactory; but remarks that the forceps should not be used under similar circumstances, except by a practitioner who is thoroughly acquainted with the process of parturition, and has also obtained the necessary delicacy of touch and accuracy of manipulation.

The Action of Large Doses of Capsicum.

The *Archiv für Pathologie* gives some researches of Hogyes showing that the action of capsicum in considerable doses is less poisonous than some authorities have asserted. It has been said to cause, when applied to the skin, redness, vesication, and ulceration; and when taken by the mouth, vomiting, inflammation, and painful diarrhœa. Landerer and Tresch assert that its active principle is capable of causing death. Hogyes, however, found little evidence of action except upon the sensory nerves, with more or less reflex hyperæmia of transient duration, and no permanent anatomical change. It increases the secretion of saliva and of the gastric juice, and favors the peristaltic action of the intestines, and so promotes digestion. Fifty grammes of powdered capsicum caused a dog to vomit twice, perhaps on account of the bulk of the dose, but it was quickly better. The same dog did not vomit after two cubic centimeters of capsicol, corresponding to two hundred grammes of the powder. Capsicol bites the tongue sharply, but applied to the conjunctiva causes only a trifling redness.

It was once thought that capsicum might furnish a substitute for quinine, because brandy, to which it has been added, is a reputed prophylactic against intermittent fever. The results of experiment do not, however, warrant any expectation of an anti-febrile action.

REVIEWS AND BOOK NOTICES.

NOTES ON CURRENT MEDICAL LITERATURE.

—A journal, to be called "The Archives of Medicine," is announced by G. P. Putnam's Sons, to be issued in February. It will be edited by Dr. E. C. Seguin.

—In a reprint from the Maryland *Medical Journal*, Dr. S. Theobald discusses the skepticism prevalent regarding the efficacy of aural therapeutics, and argues that is far from justifiable.

—The St. Louis *Courier of Medicine* is a late venture in the journalistic field. It is published monthly, by the Missouri Medical Journal Association. Its special field is to be in the profession in Missouri. The first number presents a handsome appearance, and has a number of good articles. \$3.00 per year.

—With the close of last year the English medical journals *The Doctor* and the *Medical Examiner* ceased publication. There now remain in the field but four old-established weeklies: *The Lancet*, *Medical Press*, *British Medical Journal* and *Medical Times*, with a few monthly journals, and one or two quarterlies on special subjects.

—Dr. James Rush's once popular treatise on the Philosophy of the Human Voice has long been out of print, and the publishers have decided to issue a new edition. The work was, in its day, the best then published on the subject; it embraces the Physiological History of the Human Voice, together with a System of Principles by which criticism on the art of elocution may be rendered intelligible, and instruction definite and comprehensive. Of course, much of it is now antiquated.

BOOK NOTICES.

Medical Chemistry, including the Outlines of Organic and Physiological Chemistry. By C. Gilbert Wheeler, Professor of Chemistry, in the University of Chicago. Philadelphia, Lindsay & Blakiston. Chicago, S. J. Wheeler. 8vo, pp. 424. Price \$3.00.

The author, believing that medical chemistry as such has not received the attention from writers in this country which it requires, has prepared a manual adapted especially to students who have already familiarized themselves with inorganic

chemistry and the general principles of chemical philosophy. Hence he passes by these preliminary studies, and divides his work into two parts—Organic Chemistry and Animal Chemistry. The first, he states, is mainly a translation from Riche's *Manuel de Chimie*; the second is more an original compilation. In it he takes up the various fluids and tissues of the body, its nitrogenous substances, the saliva, gastric juice, intestinal fluids, bile, blood, urine, etc., one after another, giving their constituents, reactions, chemical pathology, etc.

Throughout the work prominent and recent authorities are quoted, and judging from the articles we have particularly examined, we should say that a very fair summary of the latest and most reliable information is given. As the author justly observes in his preface, the difficulty in such a work is not from the scantiness, but from the abundance of the material, and hardly two chemists will agree on what can best be omitted. In this respect the author appears to us to have exercised good judgment.

An Atlas of Human Anatomy. Illustrating most of the ordinary Dissections and many not usually practiced by the student. Accompanied by an Explanatory Text. By Rickman John Godlee, M.S., F.R.C.S., etc. Philadelphia, Lindsay & Blakiston. Part I. Price \$2.50.

This is the first number of an atlas in large quarto, with colored plates, four in a number, to be completed in twelve or thirteen bimonthly parts. Each plate is faced by a page of references, and each part is to be accompanied by an octavo part containing the explanatory text. When completed the work will form a large folio volume of plates and references, and an octavo volume of 300 or 400 pages.

The author, Mr. Godlee, enjoys an excellent reputation in London, as a profound anatomist, a skillful teacher, and an expert artist. The plates in the number before us testify thoroughly to his last mentioned qualifications. They are very neatly drawn and colored, and will certainly render the study of regional anatomy easy and attractive. The plates show dissections of the head and neck, and it has been the design of the author to exhibit dissections not usually demonstrated, in order to enable the student to understand the mutual relation of parts which otherwise he is apt to regard as separate and independent.

The general character of the work is excellent, and no doubt it will achieve considerable popularity among students of anatomy.

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D. G. BRINTON, M.D., EDITOR.

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THE THEORIES OF EPIDEMIOLOGY.

The theory of epidemic diseases continues very incomplete. We are not very much ahead of the "epidemic constitution of the air" of Sydenham, although our more modern views incline to reduce the contagium of epidemics to fungi, bacteria, or other low forms of vegetable or animal life.

Another theory which crops out from time to time, is the cosmical or planetary origin of epidemics. A clipping has been going the rounds of the papers lately, to the effect that in 1881 we enter upon a peculiarly maleficent period of planetary and stellar arrangements, which will last six years or so, and give the doctors plenty to do. A few years since we remember a long and learned article in the *New York Medical Journal*, defending this hypothesis.

Yet another doctrine is that of the telluric origin of epidemics. Emanations of some kind from the soil are supposed to excite them. This is somewhat allied to Pettenkofer's teachings about the "ground-air" and the "ground-water." A

Parisian physician of eminence, Dr. Besnier, has urged this thing in a recent paper read before the Society of Parisian Hospitals.

"I have never been wearied," Dr. Besnier observes, "for a great number of years, in showing by facts that general hygiene and the prophylaxis of popular diseases can only be based with certitude upon a thorough knowledge of the laws of epidemiology, until lately completely ignored. It is in this direction that I have somewhat superabundantly demonstrated that there are really *benign medical constitutions* and *malignant constitutions*, determined by telluric conditions, which, although still obscure, are not doubtful as to their reality. Overcrowding, change of climate, bad hygienic conditions, exposure to contagion, misery, etc.—in a word, all the traditional and classic conditions of the generation and development of these diseases—only occupy on the general etiological plane an infinitely lower level. The public health, as well as the condition of the atmosphere, is subjected to variations. Some of these are *fixed* and *unchangeable*—viz, the *seasonary* variations, upon which the hygienist physician may found his previsions and general prophylactic measures may be regulated beforehand. Others are *irregular*, at all events in appearance, but which we are even now able, under certain circumstances, to foresee and announce, just as we are commencing to be able to scientifically announce the cause of storms. It is these latter conditions, and not the contingent traditional conditions of ordinary hygiene, which determine and regulate the great oscillations of epidemic diseases. Although these propositions have at the present time, in presence of the observations which we are continually accumulating and classifying in these reports, become truths relying upon evidence, they are far from being known or appreciated according to their value by medical opinion diverted into other channels, perhaps rich for the future, but certainly less fertile in immediate applications to the useful and practical knowledge of popular diseases."

What looks like a curious corroboration of this view is contained in a description of the late epidemic of the plague in India, written by Dr. David Manson, of Amoy. He observes one fact which inclines one to think that the epidemic is owing to exhalations from the soil, and it is this: those animals that live in the ground, in drains or in holes, are those first to be attacked. This is particularly noticeable with the rats. As soon as these animals are ill, they leave their holes in troops, and after staggering about and falling over each other, drop down dead. The same phenomenon occurs in the case of other animals, such as buffaloes, oxen, sheep, deer, pigs, and dogs. All are attacked, but the dogs less severely than the others.

"When these phenomena appear, it is not long before the disease spreads to man; and knowing this, the people take every precaution to guard themselves from the plague. They begin to purify their houses by lighting fires in every room, and in certain towns they abstain from pork. In man the disease commences with a slight fever, which rapidly increases, and in a few hours becomes very violent. The patient clamors for drink, and his thirst is insatiable. By-and-by a dark red swelling shows itself in the armpits, groins, or neck, and the fever continuing to augment, the patient becomes rapidly unconscious. The bubo increases until the second day, after which it remains stationary, and when it has attained its full size it is about as large as a hen's or goose's egg. At this stage consciousness returns, but there is still great danger, for if the swelling, which up to this point is very hard, becomes soft, and if the fever still continues, the case is considered hopeless. On the contrary, if the tumor opens externally—which is a very rare occurrence—there is a chance of recovery."

This description shows the epidemic referred to to be the same dreadful one which killed a third of the inhabitants of England in the reign of Edward III—the true "black death." There have, indeed, been various intimations that it is gathering strength for another sweep over the earth, and with this possibility in view the general subject of epidemiology assumes an importance which cannot be gainsaid.

NOTES AND COMMENTS.

Remarkable and Gratifying Change.

Sed movet! A few years ago a late eminent professor in the Harvard Medical School wrote us that he looked with repugnance at any attempt to teach the public, especially women, physiology; the same sentiment was forcibly expressed by the Dean of one of our leading medical schools here; and there may be some old fossils in the way of journals and doctors in this country and England, who still entertain this decayed notion. But note this item from the *British Medical Journal*: "To meet the demand for higher culture and wider knowledge for ladies, several of the University Professors in Glasgow have instituted classes for ladies, in which lectures are given in the different branches of science. We are glad to learn that the course of lectures on the Elements of Physiology is well attended. Such a knowledge of the nature of the vital organs and their functions, as shall give some correct ideas with respect to the means by which disease may be avoided and health preserved, is most important for all."

And note this outburst of the *Lancet*: "It is, beyond question, the high vocation of the medical profession to preach the gospel of health. There must be a code of storm-signals, intelligible to the masses, who are perpetually exposed to the gravest risks from the extension and progress of disease, and it is the bounden duty of the profession to embrace every legitimate opportunity and means of teaching and enforcing the humane lesson of an orderly and clean life, in soundness of body and mind." Ten years more will see the American profession enlightened enough to advocate acts for the limitation of syphilis by registration and examination, and several other such now impossible reforms.

Hereditary Transmission of Heart Disease.

A remarkable example of this is recorded by Dr. Rezek, of Toplitz, in the *Wiener Med. Zeitung*. Of the pair from whom the family in question descended there is reason to believe that the mother suffered from heart disease. They left two sons and five daughters. Of the sons, one is still alive, and suffers from heart disease; the other is dead, and suffered before death from dropsy; his son, moreover, suffers from some cardiac affection. The other son, still alive, has suffered for some years from heart disease, but his children are healthy. Of the three daughters, one died from heart disease, and of her five children all are healthy, but one has married and has had three children, two of whom have the "blue disease" connected with heart troubles. The second daughter of the original pair is still alive, and has suffered for many years from cardiac disturbances similar to that of her brother; of her children, one daughter has died of heart disease, and another has married and has borne a child with well-marked congenital heart disease. The third daughter of the original pair has not suffered from heart disease.

Pilocarpin as an Abortifacient.

A late number of the *Allgemeine Med. Central Zeitung* quotes four cases recently reported by various observers, where the hypodermic use of pilocarpin in pregnant women led to abortion. One case was four months gone, and aborted after the ninth injection. This should be an important caution against using this agent, which is growing in popularity, in pregnant women. As to whether it will prove of service in cases where the production of abortion is indicated for legitimate reasons, no observations have been reported.

On The Treatment of Ulcers.

Prof. Nussbaum recommends to make an incision around the ulcer one-half an inch from its margin. This incision must go through the skin, and reach the cellular tissue above the muscles. It divides the numerous adventitious vessels developed in the peri-ulcerated skin that feed the morbid process. In this way is cut off its direct and too liberal supply of blood. Into this canal lint is placed and left for twenty-four or thirty-six hours, long enough to prevent the severed tissue from rejoining by first intention. This is especially important with the arteries; they must not be allowed to unite.

In a short time the ulcer will begin to shrink; day by day the healing progresses, and in a week, or probably two, it will have disappeared.

This method is, however, inferior to that of Syme, by blisters, and of Martin, by the elastic bandage.

Induced or Symmetrical Anesthesia.

A remarkable observation has been made by M. Dumontpallier, a record of which is published in *Le Progrès Medical* of December last. If the ether spray is directed to a limited surface on the right arm, we will say, until sensibility as tested by the aesthesiometer is notably diminished, and then the sensibility be tested on the corresponding region of the left arm, it will be found that the sensibility there is also notably diminished, though in a less degree. This is not invariably the case, but is so in a large proportion of instances; and that it is not a hysterical phenomenon may be assumed from the fact that the subjects of the experiments were medical students.

The Croton Oil Treatment of Nævus.

An instance of this is given by Dr. H. F. Sigler, in the *Michigan Medical News*. He writes: The tumor was situated in the centre of the left cheek, and in size about as large as a dime. I procured a cork the size of the tumor, into which I inserted several fine needles, letting the points project one-eighth of an inch. I then immersed the points of the needles in pure croton oil, and plunged them into the tumor. A little swelling followed, and several vesicles formed soon after. The second day a crust formed over the whole tumor. This was repeated three times, at intervals of five days, and no other treatment was required.

—*Erratum.*—Page 43, column one, the temperature should read 102½ instead of 120½.

CORRESPONDENCE.**The Antagonism of Alcohol to the Poison of Diphtheria.**

ED. MED. AND SURG. REPORTER:—

In your issue of January 4th an article appeared with the heading "Diphtheria and Alcohol," written by Dr. C. H. Lewis, of Jackson, Mich. Dr. Lewis refers to a monograph by Dr. C. N. Chapman, of Brooklyn, N. Y., upon the subject of the caption of this article. In your issue of January 11th, there is a notice of a republication, from the *Temperance Record*, of the same monograph, by Dr. J. W. Sherfy, now of London, England, who approves Dr. Chapman's views. If my recollection is not at fault (the volumes of the REPORTER, for many years taken by me being now at my home in Little Rock, Ark.), the production of Dr. Chapman first appeared in the *Scientific American*, some time in the year 1877, and was referred to by you in the REPORTER. If I am wrong in this statement, you will do me a service by stating the facts.

The object of this paper is not to discredit Dr. Chapman's discovery, but to claim the same discovery made by myself in the fall of 1860. To me, it is indeed unaccountable, that many practitioners of experience and observation, upon both continents, did not in the years past reach the same conclusions. My imperfect recollection pointed to 1861 or '62 as the date of the origin of my present views of the pathology and treatment of diphtheria, but a correspondence had within the last month, with Mr. G. W. Parish, of Salem, Roanoke county Va. (my home from 1855 to 1863), furnishes me with the record of his first son's death, which occurred Oct. 28d, 1860. The little boy, twelve or fifteen months old, had diphtheria, but apparently not a very serious case. The false membrane was never extensive, and in a few days entirely disappeared; the fever continued from the first only a few days. There was not the least obstruction in any part of the respiratory apparatus. The patient was rather unusually pale, pulse rather feeble, but not above the ordinary frequency. His prospect seemed fair for recovery. Nothing but feebleness, depressed vital force, could be detected. After a few days in this condition, death closed the scene.

Reflections upon the peculiar manner of death in this case established me in the blood poison theory and the alcohol treatment, which I have diligently pursued to this day, with unbroken success, when the patients have been seen in time and my remedies promptly employed.

Soon after my discovery of the antagonism of alcohol to the poison of diphtheria, I made it known to Dr. John Rice (now deceased), of Cave Spring, Roanoke county, Va., who, after adopting the practice, never lost another case of the disease, as he declared to me in person. After I came to this place, in 1863, I informed various physicians of my successful practice; among them I recall Dr. Wade Culbertson, of Cave Springs, Ga.; Dr. Wm. Selman, of Texas Valley, Ga.; Dr. C. H. Gorman, of Alpine, Ala.; Dr. W. D. Hoyt, of this city, besides various other

persons not necessary to mention. My first publication was made in the *REPORTER*, Oct. 18th, 1875, the first upon that subject on either continent, as far as I have been able to investigate the matter. In the *REPORTER* of Nov. 7th, 1876, I repeated my practice, with its success. In my formula the compound spirits of lavender is added, to give color and flavor, and the aromatic ammonia, as a solvent of the false membrane. The antidotal property of alcohol was distinctly affirmed in my first publication, in 1875. I propose no injustice to any man, but claim that justice gives me the priority of the discovery, or at least its publication.

It would seem to me that eighteen years' experience, in hundreds of cases, at times six to eight in a family, ought to go far toward establishing the value of a remedy which has not failed in a single instance, when fairly tried. Its antidotal quality is beyond all question, in my mind, against that scourge of our race, especially the young.

J. H. NOWLIN, M.D.

Rome, Ga., Jan. 14th, 1879.

Retained Placenta.

ED. MED. AND SURG. REPORTER:—

June 1st, 1877, I was called to see Mrs. W., aged 30, the mother of five children, and in the third month of pregnancy with the sixth, who was suffering with symptoms of abortion. On inquiry I learned that the cause was excessive manual labor. An opiate procured freedom from pain, and rest. On the following day the pains recurred, and in my absence a neighboring physician was called, but not until the membranes had ruptured. He administered ergot and the embryo was expelled. No serious hemorrhage following, the case was allowed rest, to await the renewal of the pains, which had entirely ceased. In a few days the woman was up and about, apparently as well as usual.

On the 15th of April I was summoned in great haste, as the messenger said Mrs. W. was bleeding terribly. On my arrival I found the patient was entirely free from pain. She said that for three days she had suffered from retention of her menses, which had been regular, and had not been attended by more pain than usual since her abortion. A few minutes before my arrival a considerable discharge of blood took place accompanied by a body as large as a black walnut and the shape of the uterine cavity. After its discharge all pain ceased. On examination the body proved to be a placenta, which had undoubtedly been retained in the uterus for *ten and a half months* from the period of the abortion, or over one year from the time of conception. The placental mass was sent to Davenport and was there examined by several physicians, most of whom pronounced it a fibrous tumor, owing, probably, to the hard, fibrous character it had assumed under uterine pressure.

The fact that the expulsive pains were not renewed after the escape of the embryo, and that the presence of this mass in the uterine cavity did not occasion severe dysmenorrhœa, made the case one of more than usual interest.

LeClaire, Iowa. J. A. DEARMOND, M.D.

Dangers in the Use of Calcined Magnesia as a Laxative.

ED. MED. AND SURG. REPORTER:—

A few weeks since a lady, about 55, came to me with a uterine tumor, periuterine fibroid, of immense size, covering the fundus, extending above the navel, and in a great, irregular mass on both sides, and to be felt behind the uterus by vaginal digitation. This diagnosis, coming from several eminent physicians, was acquiesced in, undoubtably, by myself.

The patient came to me to be broken of morphine taking. Under the lessened use of morphine, intense pain in the "uterine tumor" set in, of a contractile type, for the relief of which friction, electricity, very hot fomentations, very copious hot rectal enemata were used, being moderately effective. The enemata, on ejection, was black, leaving a granular sediment in the vessel, partly (shown by microscope to be) old blood and partly amorphous particles. Vomiting of the same liquid was persistent to such an alarming extent as to suggest cancer of the stomach, or intestines, to the consulting physicians. Obstinate constipation being present, a large amount of purgative medicines was used, without effect, including hydrarg. bichlor. and olei tiglii. The patient, after two weeks, at last, complained bitterly of something pressing down in the back passage.

On introducing the finger, I felt something, nearly as large as, and feeling quite like, a fetal head.

It was with difficulty broken, and removed from the rectum, and found to consist of calcined magnesia, blood, fœces, etc. The patient had taken the magnesia, with vinegar, for many years, in increasing quantity, as the morphinism increased the constipation. An incredible amount passed the bowel, and at the same time the "uterine tumor" passed away.

A. A. G.

Elmira, N. Y.

Case of Epilepsy, with Treatment.

ED. MED. AND SURG. REPORTER:—

On the 31st of December, 1877, I was called to see John James, of Frenchtown (a colliery near Hazleton, Luzerne county), and found him suffering with epileptic convulsions, recurring three or four times every twenty-four hours, and had been doing so for nearly a year; prior to that, extending back nearly twelve years, he had been having them once or twice daily, with an occasional suspension of a month or six weeks. Upon inquiry, I found he had been treated by the best local talent, and also eminent men of both Philadelphia and New York, and that he had taken all the very best remedies for this disease, and taken them regularly, faithfully, and for sufficient length of time, under the advice and direction of these men, but all to no, or but very temporary, aid or relief, and I was just upon the point of saying I could do nothing for him, when, on glancing over the prescriptions (many of which he retained), I observed that he had always taken his medicine after meals. Upon further inquiry, I found he ate his breakfast at 7 A.M., dinner at 12 M., and supper at 5 or 6 P.M.; these replies

manifestly indicated that during a portion of the twenty-four hours he was not fully under the influence of the medicine. Upon this point I had based my treatment, and commenced giving him two of the very remedies he had been taking, viz, bromide of potassium and ammonium, in a solution of citrate of iron, but ordered it every eight hours, always eating an ounce of bread before and after taking each dose of medicine. He took the first dose at 6 A.M., January 1st, 1878; at 11 A.M. he had a convulsion, and up to this writing, January 4th, 1879, he has not had a convulsion, and for eight months has been following his occupation, as a miner. The only point I wish to make and impress is, that the same medicine given three times daily after meals failed, whereas when given at regularly divided intervals through the twenty-four hours they succeeded.

Hazleton, Pa. I. R. CASSELBERRY, M.D.

The Gynecological Wire Loop.

ED. MED. AND SURG. REPORTER:—

I wish to call the attention of the medical profession to a gynecological instrument of my invention, which I call the gynecological wire loop, uterine tractor, for seizing and bringing forward the mouth of a much enlarged uterus, when it is very far down and far back in a narrow, deep, virgin vagina.

The loop may be made of any wire, nickel plated, and of any size desirable, from an inch to an inch and half in diameter, and the point bent a very little up, so as the more readily to seize the os. The whole length of the instrument may be some ten or twelve inches. The above instrument I think much better than the hook, in many cases. N. L. FOLSOM, M.D.

Portsmouth, N. H., January, 1879.

NEWS AND MISCELLANY.

Report of the Board of Experts Who Have Been Investigating the Yellow Fever Epidemic.

The Board of Experts, authorized by Congress to investigate the yellow fever epidemic of 1878, submitted their report to the joint Congressional committee at its meeting on Jan. 31st. After stating that their investigation has been incomplete because of the urgent demands for public health legislation during the present session of Congress, the report says: "The board is unanimous in the opinion that the investigation of the late epidemic should be completed, and that the study of the natural history of yellow fever should be systematically pursued, and especially that the inquiries should embrace the perpetually infected parts of the West Indies, whose fields give greatest promise of practical results as the reward of faithful scientific inquiry." It is accordingly recommended that two or three skilled experts be charged with the completion of the study of the late epidemic, which can be concluded in a few months, and that at least two such experts be authorized to proceed to the West Indies, there to make a more thorough study of yellow fever than has ever yet been undertaken, and that

they be accompanied by an experienced microscopist. It is further recommended that the necessary steps be taken by Congress to secure the co-operation of the Spanish and other foreign governments, through an international commission or otherwise, in an earnest effort to ascertain the cause or causes which perpetuate the yellow fever from year to year in the West India Islands, and to devise ways to remove the cause or causes, or to lessen the chances of transporting the poison to the United States or other countries.

The report further recommends the establishment of a thorough quarantine system through the appointment of two classes of medical officers—first, medical officers of health to serve in foreign ports from which we receive importations of yellow fever and cholera; secondly, medical officers of health to have charge of quarantine stations and to supervise inter-State travel and traffic from infected places in times of epidemic. These two classes of medical officers are considered indispensable to any method of quarantine which does not involve complete suspension of intercourse with infected parts. The board regards it especially important that the selection of these officers should be made from men skilled in medicine and sanitary science, as the success of any modified quarantine scheme depends almost entirely upon the competency and fidelity of its medical officers. It is also deemed of great importance that the means may be provided by Congress for obtaining trustworthy information by telegraph in respect to the outbreak and progress of cholera, yellow fever and other epidemic diseases in all parts of the world, and the departure of vessels from infected ports bound for ports in the United States. The diffusion of trustworthy information representing the existence and progress of preventable diseases at home and abroad should be encouraged as tending to avert the evils of panic and to promote measures of prevention. The carrying into effect of an efficient system of quarantine contemplates a central authority, so organized as to gain strength from and give strength to State and municipal health organizations, and the report recommends the establishment of an advisory board of health, to be composed of men eminent in sanitary matters, who, together with the chief officer of the Health Department, shall frame all needful rules and regulations for carrying into effect, subject to the approval of the President, such national public health laws as may be enacted.

The board dwell at considerable length upon the origin, cause and distinctive features of yellow fever, and say that it is a specific disease and is produced by the introduction into the human organism of a specific poison. The specific poison of yellow fever has never been chemically or microscopically demonstrated, nor in any way made evident to the human senses. Nevertheless, we hold that it is safe to assume that it is material and particulate, and endowed with the ordinary properties and subject to the ordinary laws of material substances.

—There are more than sixty American medical students in Vienna this year. One of these is a lady.

Personal.

—The venerable Professors, Fauvel and Noel Gueneau de Mussy have been retired from the Hôtel Dieu at Paris, having reached the limit of age allowed by law.

—Professor Billroth has performed the operation of œsophagotomy again, with the hope of lengthening the life of a man suffering from stricture of the œsophagus. This is the fifth occasion, we understand; and the success is encouraging, considering the great benefits the operation has been able to afford more than once.

—French medicine has just sustained a highly regrettable loss in the person of Antoine Pierre Ernest Bazin, formerly physician to the St. Louis Hospital, who attached a seal of originality to his investigations in dermatology, and created a generation of faithful disciples. His views on the syphilides, and still more his doctrine of the arthritides, are those which excited most attention, revealing as they did a talent both for observation and generalization.

—Professor Brown-Séquard began his course of lectures on Physiology in December, at the Collège de France. In his opening address he made known the subject which it was his intention to treat. He proposed to combat all the doctrines which are actually received upon the physiology of the brain, and especially those which have reference to cerebral localization. He would study the mode of action of the brain upon the spinal cord, and discuss the question whether it is right to admit the existence of two brains or one only. He would then review all the lesions of the brain which are capable of producing physiological or morbid phenomena.

Smallpox in Brazil.

South America is having an epidemic of smallpox, which threatens to cause as much suffering as the yellow fever did in the South, or as the plague is now creating in Eastern Europe. Intelligence is at hand giving information of the ravages of the disease in some parts of Brazil. In the city of Ceara there were 11,075 deaths in October, 9844 in November, and 17,891 from December 1 to 11. In the latter part of December the death rate was 900 a day. There is also a famine, and until the latter part of December, when the neighboring provinces sent pecuniary assistance, people were dying off of starvation, having neither water nor grain. The population of Ceara, according to estimates based upon the last census, is less than 40,000, but it has been much swollen since the famine began, when people from the interior began to flock there.

The Medical Staff of the Russian Army.

The Russian *Medical Gazette* states that in 1876 the strength of the medical staff of the Russian army was 2300. In the course of that year 120 medical men were added to the staff; in the course of the next year (1877) the additions were 900; and in the following year (1878) 750. The maximum number of medical men attached to the army during the last war was 4000.

Notes on Health Resorts.

The number of visitors to Florida this winter is less than usual. Cold of an unusual degree of severity was experienced the last of December, and it was feared the orange groves above Jacksonville have suffered. Serious complaints continue to be made of the hotel accommodations, except at three or four points.

Santa Barbara and Southern California have also experienced unusually cold and variable weather. A physician who recently returned from spending a year in that region tells us that the most correct description of the health advantages of that climate he has ever read was that by the late Dr. Ralph N. Townsend, published in the *REPORTER*, two years ago.

The celebrated Swiss resort, Davos am platz, 5200 feet above sea level, has had an unfavorable winter so far. The *Föhn* or south wind has blown in an unprecedented manner, melting the snow and producing an unusual amount of rain and dampness. There were, at Christmas, 180 Americans and English there, one-half of whom were consumptives.

OBITUARY NOTICES.

Dr. John B. Biddle.

HALL OF JEFFERSON MEDICAL COLLEGE, Philadelphia, January 20th, 1879.

At a meeting of the Faculty, held this day, the death of Dr. John B. Biddle, Professor of Therapeutics and Materia Medica, and Dean of the Faculty, was announced, whereupon, the following was ordered to be entered upon the minutes of the Faculty:—

"The Faculty of Jefferson Medical College find themselves plunged into the deepest sorrow by the death of their fellow-member, Dr. John B. Biddle, Professor of Therapeutics and Materia Medica and Dean of their body, which occurred on the evening of the 19th instant. As a friend, they feel sadly the void thus created, and mourn over the departure of a greatly loved companion. Endeared to them by his noble qualities of head and heart; as their colleague and executive officer, they realize the irreparable loss of a sound and sagacious thinker, an able and successful teacher, and a faithful, experienced and judicious executive, whose untiring zeal and earnest labors in his own department, and for the school at large, have contributed so much to maintain the usefulness and advance the reputation of Jefferson Medical College.

"The Faculty feel that words are inadequate to express their sense of this bereavement, but desire to make record of the estimate in which they held the deceased, whose memory they will ever cherish with sincerest affection.

"They desire to convey to his sorrow-stricken family their warmest sympathy, trusting that in the knowledge they have of the esteem in which he was held in the community, and the love which was borne him by all his co-laborers and friends, and, that he has left them in the assurance of a Christian faith for that larger life which is eternal, they find comfort and consolation.

"Resolved, That a copy of this testimonial of

the Faculty be transmitted to the family of Dr. Biddle, and also to the honorable Board of Trustees, and that the Faculty will attend his funeral in a body.

"ELLERSLIE WALLACE, Dean."

Resolutions of respect were also passed by the Board of Inspectors of the Philadelphia County Prison, of which Dr. Biddle was President.

Dr. Nathan Mitchell.

Died at his home in Colon, St. Joseph county, Michigan, January 26th, in the seventy-first year of his age. He was born November 27th, 1808, in the town of Calais, Washington county, State of Vermont; his father being a farmer, he was early trained to agricultural pursuits, which he followed until he became of age, securing at the same time more than an average education from the limited educational advantages of those days. He immediately commenced the study of medicine, and in 1830 entered the Middleburg Medical College, and graduated in 1834. Starting immediately for the far west, as it was considered in those times, he located in Trumbull, Ashtabula county, Ohio, and practiced his profession successfully in that place for five years. In 1839 he came to Michigan, and located in Colon, St. Joseph county, where he has been ever since. Commencing as he did with the early settlers, he has shared all the changes of a new country with them, and for forty years has been a faithful physician to the people, riding far and near in an early day, to relieve suffering, and oftentimes without money and without price.

About two years ago a cancer made its appearance on his lip, and has steadily progressed, destroying all the lower portion of the face, gums, jaw, and neighboring ganglions.

Dr. Tardieu.

The eminent Dr. Tardieu, of Paris, died last month. Not a few remarkable works on pathological and clinical medicine has the world to thank this great mind for, the latest of which, bearing the date 1879, is entitled "*Etudes Médico-Legal sur les Blessures*." Tardieu was, perhaps, best known for his "*Dictionnaire Hygiène Publique*," and also for his celebrated brochure "*Etudes Médico-Legal sur les Attentats aux Mœurs*," which in a short space of time has been through seven editions, and is, so far as we are aware, the only scientific treatise ever written on this subject.

Dr. S. H. Shannon,

A graduate of Jefferson Medical College, of the class of 1836, died at Schuylkill Haven, Jan. 17th, after a lingering illness. He was born at Shannonsville, Pa., in 1814. The deceased had a varied and extensive practice of forty years, which gave him a position as a skillful practitioner. He was one of the largest property holders in the county. Dr. Shannon was a friend and benefactor to the poor, to whom his services were dispensed with liberality, and who will have occasion to deeply mourn his loss.

—Malarial disease is reported, on official authority, to have decreased in New York since

1872, although the popular belief is that such disorders are constantly increasing. The Sanitary Inspector of the Board of Health remarks, in a report to that body, that the virulence of malaria noticeable prior to 1872 has been much modified of late years.

QUERIES AND REPLIES.

Dr. J. E. G., of Wis.—The sub-chloride of bismuth, or the precipitated carbonate of zinc, tinted with carmine to a flesh color, and diluted to the consistence of cream, would be an appropriate mixture to conceal tattoo marks.

Dr. A. Aid.—"Does the American Medical Association sanction the making of contracts with families by physicians?"

Ans.—No direct sanction has been given this practice. It has been left to the discretion of members and the varying demand of circumstances. The general sentiment is averse to such contracts.

Dr. F. V.—"Is it a violation of the code to publish a post-mortem case in the daily journals, stating the physicians present, etc.?"

Ans.—An officer of the American Medical Association informs us that such a procedure is not in violation of the code; but that it meets with general disapproval of the members.

MARRIAGES.

BRENNISHOLTZ—HOLLINBERGER.—December 26th, by Rev. J. H. Stewart, Dr. A. K. Brennisholtz and Annie Hollinberger, all of Greencastle, Pa.

CAWLEY—CLAUSER.—On December 31st, 1878, by Rev. E. J. Fogel, Dr. J. Irving Cawley, of Allentown, Pa., and Miss Annie M., daughter of Joel Clauser, Esq., of Balliettsville, Pa.

ERWIN—SLEEPER.—In North Troy, Vt. January 1st, by Rev. G. H. Parker, A. F. Erwin, M.D., and Ella E. Sleeper, both of Newport, Vt.

GAYDEN—PERKINS.—At the residence of the bride's father, on the 26th of December, 1878, by Rev. Thomas Lansdell, Dr. Agrippa Gayden and Miss M. O. Perkins, both of E. Feliciana, La.

LUDLOW—CARNOCHAN.—On Thursday, January 16th, at Grace Church, New York, by the Rev. Henry C. Potter, D.D., assisted by Rev. J. Breckenridge Gibson, D.D., and Rev. J. O. Tebbetts. Thomas W. Ludlow and Harriet Frances, daughter of Dr. J. M. Carnochan.

SAYRE—POMEROY.—On Wednesday, January 15th, at St. Thomas' Church, New York, by Rev. Dr. Morgan, assisted by the Rev. Henry C. Potter, of Grace Church, Lewis Hall Sayre, M.D., and Alice, only daughter of William L. Pomeroy.

DEATHS.

ALDEN.—In New York, on Sunday, January 19th, Mary Lincoln, daughter of Dr. Charles and Kate Lincoln Alden, in the 7th year of her age.

BAYLOR.—In Denver, Colorado, on January 13th, 1879, Dr. John C. Baylor, of Norfolk, Va.

BENEDICT.—At Yonkers, N. Y., Sunday, 19th ult., of scarlet fever, William Newell, son of Dr. A. C. and Irene Newell Benedict.

BIDDLE.—In Philadelphia, on the evening of Sunday, January 19th, Dr. John B. Biddle, in the sixty-fifth year of his age.

EAKINS.—Dr. F. R. Eakins, of Macon, Ill., of cancer of the stomach, January 27th, 1879.

WHITE.—January 8th, at 5 o'clock, P.M., Dr. John White, in his 86th year.

WILLIAMS.—On the 15th ult., Agnes, wife of Dr. W. Williams, and daughter of John J. and Rachel S. Rowan.